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ABSTRACT

The report describes a three-day training program to improve the competencies of vocational educators in utilizing manpower information in planning vocational education programs. The program summary presents the goals and objectives, topics covered, procedures followed in participant selection and instruction, activities and accomplishments of the trainees, instructional materials and equipment used, program evaluation, and conclusions and recommendations. Included in the report are the four models for manpower forecasting that were developed by the participants in groups during the workshop. The results of the pretesting and post-testing of the participants is discussed, and the tabulated results of the participant evaluation of the program, instruction, and general organization of the program also appear. Also included in the report are cover letters, program application form, participant list, program agenda, the testing instrument, and participant evaluation forms. (NJ)

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FINAL REPORT

Project No. VO158VZ
Grant No. CEG-O-74-1677

MANPOWER INFORMATION RESEARCH TRAINING PROJECT

Research Project in Vocational Education
Conducted Under
Part C of Public Law 90-576

The project report herein was performed pursuant to a grant from the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors or grantees undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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March 1975

U. S. DEPARTMENT OF HEALTH
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TABLE OF CONTENTS

TITLE PAGE	1
TABLE OF CONTENTS.	11
LIST OF TABLES	111
SUMMARY.	1
PROBLEM AREA	6
GOALS AND OBJECTIVES	6
DESCRIPTION OF GENERAL PROJECT DESIGN.	8
Procedures.	8
Criteria for Trainee Selection.	9
Participants.	9
Instructional Personnel	10
Instructional Materials	11
Location of Program	11
Description of Program.	11
RESULTS AND ACCOMPLISHMENTS.	12
Model I	13
Model II.	13
Model III	14
Model IV.	14
EVALUATION	15
CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS.	22
APPENDICES	
Appendix A - Letter of Announcement	23
Appendix B - Application.	25
Appendix C - News Release	27
Appendix D - Letter of Acceptance	28
Appendix E - Notice of Wait-Listed.	29
Appendix F - List of Participants	30
Appendix G - Pre-Test and Post-Test	33
Appendix H - Agenda.	35
Appendix I - Participants' Evaluation	37

LIST OF TABLES

TABLE I - Participants' Evaluation 16

TABLE II - Evaluation of Instruction 19

5. Summary of Report

(a) This is the final report on Project No. VO158VZ, Grant No. OEG-0-74-1677, Manpower Information Research Training Project. The time period covered is the duration of the project, July 1, 1974, to December 31, 1974.

The Ohio State University in cooperation with the AVA and the U. S. Office of Education sponsored a special three-day research training program where the focus was on manpower information systems for vocational education. This program was held December 4, 5, and 6 at the Marriott Hotel in New Orleans as a pre-session to the 1974 AVA Convention.

(b) Goals and objectives of the project.

The basic objective of this program was to upgrade the competencies of vocational educators in utilizing manpower research in the planning of vocational education programs.

1. Recognize the differences between the objectives and content of vocational/technical education programs based on manpower data and those programs based on other criteria.
2. Develop an awareness of the influence and power of national manpower information and local manpower information in determining what vocational/technical programs should exist.
3. Develop increased competency in the use of research designs, tools, and techniques which will be useful in studying manpower needs.
4. Be able to identify and evaluate selected resources available to local program planners which can facilitate vocational education program planning based upon manpower data.
5. Be able to develop a conceptual framework or model for planning vocational/technical education programs based upon manpower research.
6. Develop the ability to utilize the results of such research by developing programs which match job requirements to the skills of present and prospective workers.
7. Develop the ability to translate manpower forecasts into program and specific curriculum requirements.
8. Be able to identify government agencies, labor organizations, educational agencies and community organizations which have a role to play in the planning of vocational/technical education programs.

Topics covered included:

The scope and function of research in the study of manpower needs.

Assessing manpower requirements by industry and occupation:
Projecting historical trends, effects of national and state influences,
estimating the effects of changing employment.

Utilizing existing labor market information in local program planning:
sources, types and forms of data, validity and usability of data.

Collecting manpower data:

1. development of instruments for collecting data for use in educational planning.
2. criteria for selecting among available instruments and procedures in manpower research (prediction, occupational statistics, occupational data requirements for educational planning, etc.)
3. research methodologies and statistics appropriate to the collection and analysis of labor market information (employment forecast surveys, measurements and interpretation of job vacancies, etc.)
4. utilizing the results of occupational and testing research programs, data on placement, counseling and other present manpower services.

Working with government and community organization in collecting and utilizing labor market data.

Matching job requirements to the skills of present and prospective workers.

Translating manpower forecasts into program and curriculum requirements.

Cooperative approaches with government agencies, labor organizations, educational agencies and community organizations for the planning, operation, and development of vocational education programs based upon accurate manpower data.

The development of a model for planning vocational/technical education programs based upon manpower research.

(c) Procedures Followed

Number of Trainees

This program was limited to 36 individuals who were directly involved in vocational/technical education in one or more of the following functions: program planning, administration, curriculum development, evaluation, and research. The applicants selected were from state departments of education, research coordinating units, regional laboratories, universities, local educational agencies, and the U. S. Office of Education.

By limiting the group to 36 it was possible to stay within a desired budget range and to maintain group sizes small enough to permit individual participation, yet large enough to acquire the desired variety of contributions.

Trainee Selection Procedure

A program announcement listing the location, dates, content, and enrollment quota was developed along with an application form and distributed throughout the vocational education community of the nation. The announcement was mailed to state directors of vocational education (with a letter requesting that it be distributed to staff), to participants of previous programs, to directors of Research Coordinating Units, to the Federal and Regional Offices of U.S.O.E., to Deans of Schools of Education, to city or other Vocational Supervisors, as well as to agencies and individuals named by any of the above.

An announcement of the program was placed in the American Vocational Journal.

Criteria for Trainee Selection

The basic factor considered in the selection of applicants was the present or projected employment responsibilities of the applicant.

Admission to the program was limited to those who have one or more of the following responsibilities in vocational/technical education on the local, state, or national level.

1. program planning
2. administration
3. curriculum development
4. evaluation
5. research

Other factors considered when the above requirements were met included: education, experience, demonstrated interest in manpower research, and potential for use and application of competencies acquired in the program.

Selection was made by the project director.

Program Outline

The program began at 8:30 a.m., Wednesday, December 4, 1974, and closed at 5:00 p.m. on Friday, December 6, 1974, for a total of twenty-one hours of instruction.

A pre test was given at the opening session and a post test was given at the final session. The results of the pre test and post test were used to assess the learning that had taken place during the training period.

The pre test and post test were identical and were based directly on the specified learning objectives.

Based upon results of the pre test and specifically expressed interests of the individual participants, the class was divided into four groups of nine members each.

Instructional Personnel

Jack Kaufman and George Neumann, both of Pennsylvania State University, were the instructors for this program. Dr. Neumann is an econometrician with expertise in manpower forecasting, research, statistics, and computer technology. Dr. Kaufman is a nationally known manpower economist with a broad background of experience in vocational education, manpower research, program planning, budgeting systems, and program evaluation.

Neal E. Vivian, Professor of Vocational/Technical Education at The Ohio State University acted as program director.

(d) Results; Accomplishments

Each group was given a case study in manpower forecasting.

A number of sources of data were available for the participants' use during the session. In addition, a computer terminal was available to enable the students to extract other data, develop regression lines, and solve complex equations needed in performing manpower research and making long-range projections.

As they were working on their simulated exercise each group developed their own models for manpower forecasting. They were given examples of previous models for guides and also discussed important elements to be used in models and suggestions for the development of forecasting models.

(c) Evaluation

As described earlier a pre test and a post test was administered to each individual participant at the beginning and the end of the session. This test was based directly on the instructional objectives of the program. The result was a mean gain score of 1.27 points on a ten point examination. This was a statistically significant gain.

In order to evaluate the effectiveness of each program, trainees were asked to indicate (a) the extent of their progress toward the stated goals of the program, (b) the degree of congruence between their prior expectations and program objectives, (c) the appropriateness of content, in light of program objectives, and the effectiveness of instruction, and (d) suggestions for the content of future training programs.

The general response of the participants was quite favorable.

(f) Conclusions and Recommendations

This program, conducted as a pre-session to the American Vocational Association in New Orleans on December 4, 5 and 6, 1974, provided training in manpower research for thirty-six participants. The testing and evaluation indicated that the program was a success in meeting its basic objective and was favorably received by those attending. On the basis of the above conclusions, it is recommended that similar programs be continued in the future.

6. (a) This project provided training for thirty-six individuals in a three-day program conducted as a pre-session to the American Vocational Association Convention in New Orleans on December 4, 5, and 6, 1974.

The basic objective of this program was to upgrade the competencies of vocational educators in utilizing manpower research in the planning of vocational education programs.

The utilization of manpower information and the projecting of manpower needs into the future is recognized as providing vital information to vocational/technical specialists. Vocational educators have come to assume that using manpower information and manpower forecasting constitutes an integral part of their function. They are encouraged in this feeling by panels of experts and the spirit of the laws, notably the Vocational Act of 1963 as amended in 1968. Drafters, and later interpreters of the act, assumed as a matter of course that planning with the improved use of labor market forecasting could improve the performance of vocational education. Vocational educators, however, have reacted only sluggishly to changing manpower requirements and a large part of this slow reaction can be attributed to two factors: (1) the lack of accurate data available to them and (2) the lack of expertise on the part of vocational educators in making manpower projections and utilizing that data which is available. In enacting the vocational amendments of 1968 Congress established a national policy requiring the development of a planning and management system for vocational and technical education that would react more quickly to the dynamics of the economy and society and thereby provide more efficient and effective programs which would: (1) provide for manpower needs and job opportunities now and for changes that will occur in the future, (2) take into consideration the educational and economic needs and aspirations of the people to be served. The increased emphasis on manpower research in vocational education has served to underscore the immediate need for greater numbers of vocational educators with stronger backgrounds in statistics, research, and particularly those skills involved in making accurate manpower projections, translating manpower forecasts into program requirements, and the use of available job labor and demographic information related to the needs of the federal, state, and local levels.

- (b) Goals and objectives of the project.

The basic objective of this program was to upgrade the competencies of vocational educators in utilizing manpower research in the planning of vocational education programs.

Topics covered included:

1. The scope and function of research in the study of manpower needs.

2. Assessing manpower requirements by industry and occupation: Projecting historical trends, effects of national and state influences, estimating the effects of changing employment.
3. Utilizing existing labor market information in local program planning: sources, types and forms of data, validity and usability of data.
4. Collecting manpower data:
 - a. development of instruments for collecting data for use in educational planning.
 - b. criteria for selecting among available instruments and procedures in manpower research (prediction, occupational statistics, occupational data requirements for educational planning, etc.)
 - c. research methodologies and statistics appropriate to the collection and analysis of labor market information (employment forecast surveys, measurement and interpretation of job vacancies, etc.)
 - d. utilizing the results of occupational and testing research programs, data on placement, counseling and other present manpower services.
5. Working with government and community organizations in collecting and utilizing labor market data.
6. Matching job requirements to the skills of present and prospective workers.
7. Translating manpower forecasts into program and curriculum requirements.
8. Cooperative approaches with government agencies, labor organizations, educational agencies and community organizations for the planning, operation, and development of vocational education programs based upon accurate manpower data.
9. The development of a model for planning vocational/technical education programs based upon manpower research.

Participant objectives.

As a result of completing this program the participants should:

Recognize the differences between the objectives and content of vocational/technical education programs based on manpower data and those programs based on other criteria.

Develop an awareness of the influence and power of national manpower information and local manpower information in determining what vocational/technical programs should exist.

Develop increased competency in the use of research designs, tools, and techniques which will be useful in studying manpower needs.

Be able to identify and evaluate selected resources available to local program planners which can facilitate vocational education program planning based upon manpower data.

Be able to develop a conceptual framework or model for planning vocational/technical education programs based upon manpower research.

Develop the ability to utilize the results of such research by developing programs which match job requirements to the skills of present and prospective workers.

Develop the ability to translate manpower forecasts into program and specific curriculum requirements.

Be able to identify government agencies, labor organizations, educational agencies and community organizations which have a role to play in the planning of vocational/technical education programs.

(u) Description of general project design and procedures followed.

In July, 1974, a letter describing the program including location, dates and objectives of the program along with an application blank was mailed to selected people in the vocational education community of the nation. This announcement was mailed to State Directors of Vocational Education, Directors of Research Coordinating Units, Part D Program Officers, Curriculum Liaison Representatives, OAE Directors and Part D Project Officers with the U. S. Office of Education. (Appendix A.).

An announcement of the program was placed in the September, 1974, issue of the American Vocational Journal (Appendix C.).

Number of Trainees

This program was limited to 36 individuals who were directly involved in vocational/technical education in one or more of the following functions: program planning, administration, curriculum development, evaluation, and research.

By limiting the group to 36 it was possible to stay within a desired budget range and to maintain group sizes small enough to permit individual participation, yet large enough to acquire the desired variety of contributions.

Criteria for Trainee Selection

The basic factor considered in the selection of applicants was the present or projected employment responsibilities of the applicant.

Admission to the program is limited to those who have one or more of the following responsibilities in vocational/technical education on the local, state, or national level.

1. program planning
2. administration
3. curriculum development
4. evaluation
5. research

Other factors considered when the above requirements were met included: education, experience, demonstrated interest in manpower research, and potential for use and application of competencies acquired in the program.

A total of 51 applications were received. Selection was made by the project director. In late August, letters notifying the applicants of acceptance were begun to be sent out. (Appendix D.) Those who were not immediately accepted were notified that their name had been placed on a waiting list and as vacancies occurred they would be reconsidered for acceptance. (Appendix E.)

Of the original 36 accepted, eight people subsequently notified the project director of their inability to attend. Eight additional people were selected from the waiting list.

Participants

Of the 36 participants selected, 32 were from State Departments of Education, four were employed by universities, two by local school systems and one each by the U. S. Office of Education and the U. S. Department of Labor.

Fifteen of the participants had a major responsibility in research; 10 were Directors or Associate Directors of Research Coordinating Units and five were listed as Research Specialists or Research Associates.

Positions held by the participants included:

Directors or Assistant Directors of Research Coordinating Units	10
Research Specialists or associates	5
Professor of Manpower Economics	2
Specialist, State Plan Development	2
Coordinator of Manpower Needs Studies	1
Assistant Administrator, Management Information Systems	1
Director, Needs Assessment Project	1
Director, Occupational Information Unit	1
Manpower Analyst	2
Manpower/Occupational Education Specialist	2
Director, Bureau of Planning & Budget	1
Director, Administration and Planning	1
Administrative Assistant	1
Program Analyst	1
Senior Program Officer VTE	1
State Director of Vocational Education	1
Coordinator of Extended Services	1
Director, Bureau of Program Accountability	1
Local Director of Vocational Education	1

36

A list of participants is contained in Appendix F.

Instructional Personnel

At the same time as the letters of announcement were sent out, the instructors were contacted and put under contract.

Jack Kaufman and George Neumann, both of Pennsylvania State University, were the instructors for this program. Dr. Neumann is an econometrician with expertise in manpower forecasting, research, statistics, and computer technology. Dr. Kaufman is a nationally known manpower economist with a broad background of experience in vocational education, manpower research, program planning, budgeting systems, and program evaluation.

Instructional Materials and Equipment

Upon the recommendation of the instructors and the approval of the project director, a kit of instructional materials was assembled for each participant.

Included in this kit were the following:

1. Handbook For Manpower Planners, Part 1, U. S. Department of Labor, Manpower Administration and U. S. Department of Commerce, Bureau of the Census.
2. The Practice of Manpower Forecasting, Bashir Ahamad and Mark Blaug, Jossey-Bass, San Francisco - Washington, 1973, pp. 1-25 reprinted with special permission of the publishers.
3. "Manpower Forecasting: A Critique With Applications to the Bituminous Coal Industry", Jack J. Kaufman.
4. A Bibliography of Published Information for Reference Libraries on Manpower Forecasting.
5. The Localization of Federal Manpower Planning, edited by Robert L. Aronson, New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York.

In addition a remote job entry computer terminal (RJE), Anderson-Jacobson Model 630 was obtained for the program. This was connected to a computer and data bank at the Pennsylvania State University.

Location of Program

The program was conducted in the La Galerie No. 6 Room of the Marriott Hotel in New Orleans. This was also the headquarters hotel for the American Vocational Association. The facilities were excellent. The room was set up conference style and chalkboards, flip chart and a computer terminal was provided. The computer terminal was connected to a computer and data base at the Pennsylvania State University.

Description of the Program

The program began at 8:30 A. M. on Wednesday, December 4, 1974, and closed at 5:00 P. M. Friday, December 6, 1974, for a total of twenty-one hours of instruction.

The program began with the participants taking a pre-test. (Appendix G.)

Dr. Kaufman spent the balance of the morning on a discussion of "The Logic and Methods of Manpower Planning."

In the afternoon both instructors jointly presented the following topics: "Elements of Manpower Planning Models" and "Types of Models and Their Limitations."

Thursday morning the instructors conducted a group discussion on "The Construction of Models" and "Data Limitations." The participants then were presented with a case study on the bituminous coal industry.

Immediately after lunch, the participants were divided into four groups. Their assignment was to develop a model and forecast manpower requirements for the bituminous coal industry using the case study as a guide.

A description of the four models developed appears in section (d), Results and Accomplishments.

On Friday morning the four models were presented and critiqued by the entire group and the instructors.

Immediately after lunch, the utilization of the computer in manpower planning was demonstrated by George Neumann. The formulas developed within each of the four models were put into the computer and the results were presented to the group.

The final step in the program was the final testing of the participants. The post-test was identical with the pre-test. The results of the testing program are discussed under the section Evaluation.

The conducting of the post-test was a departure from the original agenda. It was originally scheduled for Thursday. A copy of the agenda is contained in Appendix H.

(d) Results and accomplishments of the project.

The following four manpower forecasting models were developed by the participants to analyze manpower needs in the bituminous coal industry.

Model I

The first model developed focused on the different productivity trends in surface (strip) and underground mining of bituminous coal. Total manpower requirements were the sum of underground and surface. This model required that constraints on production such as a ban on stripping of western coal or the strict enforcement of the Coal Mine Health and Safety Act of 1969 be explicitly dealt with in forecasting of employment.

Manpower Demand Total = manpower demand in strip mining and underground mining

$$M_T^D = M_S^D + M_U^D$$

Manpower demands in each sector were related to exogenous variable

$$M_S^D = a_0 + a_1 \text{ Output (tons of coal)} + a_2 \text{ Effects of Health and Safety Act} - a_4 \text{ Effects of Strip Mining Bill}$$

$$M_U^D = b_0 + b_1 \text{ Output (tons of coal)} + b_2 \text{ Effects of Health and Safety} + b_4 \text{ Effects of Strip Mining Bill}$$

Model II

The second model developed focused on the joint determination of earnings and employment in an industry. Explicit recognition was given to the substitution possibilities in production (if wages are too high, employers will resort to alternative inputs and technologies), and in supply (if wages and working conditions were unsatisfactory, recruitment of new personnel would become exceedingly difficult). This approach to the forecasting of the demand for and supply of labor carefully separated possible causes into their supply and/or demand effects. For example, changes in health and safety conditions would have an effect in this model, primarily through the beneficial effects they would have on individuals' willingness to work.

Manpower demand must equal manpower supply

$$M_T^D = a_0 + a_1 \cdot \text{Wages in mining} + a_2 \cdot \text{Output} - a_3 \cdot \text{Number of Continuous Mines}$$

M_T^S = total manpower supply = $b_0 + b_1$. Wages in mining
 + b_2 . Effects of Health and Safety - b_3 . Wages in
 Alternative Occupations

Model III

This approach represented a combination of Models I and II. The demand for employment was seen as being proportional to the level of production, with the coefficient of proportionality varying over time in a predictable manner. In particular, the coefficient was argued to be affected by: health and safety legislation, environmental regulations, unions, aggregate demand, inter alia.

$M_T^D = \gamma$. Output (total)

Manpower demanded is proportional to output

= $C_0 + C_1$. Effects of Health and Safety + C_2 Unionization
 + C_3 . Time + C_4 . Output

The coefficient of proportionality was assume to vary with the level of output and with a trend, reflecting increased technology, as well as being affected by unions and federal health legislation.

Model IV

The final model developed was the model which was most familiar to all participants. Manpower demand in a future period was expressed as employment in the previous period multiplied by one plus a growth factor. The growth factor was expected to be influenced by a number of factors, but could be reasonably forecasted from previous behavior. Labor supply in this model, as in Models I and III, was defined to be the supply in the previous period multiplied by one minus the accession rate, where accessions were broadly defined to include death, retirements, quits, and disabilities. Individuals who were currently being trained were also added to the supply. The difference then between forecasted labor demand and labor supply could be expressed as manpower requirements for expansion and for replacement.

Total manpower demand in one period is equal to demand in the previous period multiplied by one plus a growth factor

$$M_t^D = M_{t-1}^D (1 + g)$$

g = growth factor

= $d_0 = d_1$. Effects of Health and Safety
+ d_2 Time

Manpower supply in one period is equal to supply in the previous period multiplied by one minus the accession rate

$$M_t^S = M_{t-1}^S \cdot 1 -$$

= accession rate

$$M_t^D - M_t^S = \text{net manpower requirements for expansion and replacement.}$$

(e). Evaluation of the project.

As mentioned earlier, a ten item evaluation instrument was used to pre-test and post-test the participants. A copy of this test is in Appendix G. Thirty-two of the participants completed both the pre-test and the post-test.

The results are as follows:

$$\text{Pre-Test Mean } \bar{X}_1 = 4 \quad \text{Mean difference (Md) = 1.27}$$

$$\text{Post-test Mean } \bar{X}_2 = 5.27$$

Thus the average participant gained 1.27 from the pre-test to the post-test.

A simple t test of the differences between the two means was made as follows:

$$t = \frac{\text{Md}}{\sqrt{\frac{s^2 d}{(NCN-1)}}} \quad t = \frac{1.27}{\sqrt{\frac{155.453}{1056}}} = 3.307$$

This difference was statistically significant at the .01 confidence level.

In addition to the pre-testing and post-testing of the participants, each of the participants was asked to complete an evaluation form (Appendix I). Thirty-three of the thirty-six participants completed useable evaluations sheets. The summaries and a description of their reaction follows:

TABLE I
PARTICIPANTS' EVALUATION

1. ORGANIZATION OF THE PROGRAM

<u>N</u>	<u>%</u>	
3	9	Excellent organization in meaningful sequence
13	39	Well organized
14	42	Adequate, but could be better
1	3	Inadequate organization
2	6	Confused and unsystematic

2. PROGRAM LENGTH

22	67	Program length was just right
7	21	Program was long, but acceptable
2	6	Program was short, but acceptable
2	6	Program was much too long
2	6	Program was too short to cover the content

3. DEGREE TO WHICH PROGRAM OUTCOMES MET MY PRIOR EXPECTATIONS

0	0	Program exceeded my prior expectations
12	36	My prior expectations were well met
6	18	Program was adequate in terms of prior expectations but could have been better
8	24	Program was barely adequate in this respect
7	21	Program completely failed to meet my expectations

4. HOW REALISTIC AND ATTAINABLE WERE THE OBJECTIVES AND OUTCOMES OF THE SEMINAR?

N	%	
5	15	Very realistic and easily attainable
13	39	Capable of being accomplished by most participants
10	30	Adequate, or average
5	15	Lacking in realism considering time involved and type of participants
0	0	Completely unrealistic

5. APPLICABILITY OF CONTENT TO NEEDS

5	15	Content was exceptionally well related to my needs
9	27	Content was moderately well related to my needs
12	36	Content was adequate -- could be better
6	18	Content was only slightly related to my needs
1	3	Content was completely unrelated to my needs

6. LEVEL OF CONTENT

9	27	Content level was just about right
9	27	High, but acceptable
10	30	Low, but acceptable
4	12	Content was far above level needed for my work
1	3	Level was entirely too low

7. OPPORTUNITY FOR QUESTIONS AND DISCUSSION

29	88	Ample opportunity
4	12	Moderate opportunity
0	0	Occasional opportunity
0	0	Rare opportunity
0	0	Never

8. TEXTS OR OTHER PRINTED INSTRUCTIONAL MATERIALS

<u>N</u>	<u>%</u>	
6	18	Texts and materials excellent.
8	24	Good
9	38	Adequate, but could be better
6	18	Text and materials need modification
4	12	Text and materials entirely inappropriate

9. CONTRIBUTION OF PROGRAM TO INCREASED JOB COMPETENCIES

3	9	Program will be of great value in increasing job competencies
18	55	Program will be helpful
4	12	Program will be of moderate value only
6	18	Program will be of little value
1	3	Program will be valueless

10. MEETING ROOMS OR ACCOMMODATIONS

21	64	Excellent
11	33	Good
0	0	Barely adequate
0	0	Poor
0	0	Completely inadequate

TABLE II

EVALUATION OF INSTRUCTION

	SA	A	N	D	SD	
N	17	11	2	2	1	11. The instructors possessed a thorough knowledge of the subject.
%	52	33	6	6	3	
N	9	16	4	4	0	12. The instructors could communicate the subject matter to the students.
%	27	48	12	12	0	
N	18	8	6	1	0	13. The instructors' attitudes were enthusiastic and stimulating.
%	55	24	18	3	0	
N	6	10	9	6	2	14. The instructors presentations were well organized.
%	18	30	27	18	6	
N	10	8	10	2	3	15. The method of teaching was appropriate to the program.
%	20	24	30	6	9	
N	6	15	7	3	2	16. My responsibilities were clearly defined.
%	18	45	21	9	6	
N	12	9	5	4	3	17. The instructors were receptive to the expression of student views.
%	36	27	15	12	9	
N	15	15	2	1	0	18. Assistance from the instructor was readily available.
%	45	45	6	3	0	

GENERAL ORGANIZATION OF THE CONFERENCE

N	13	10	5	3	2	19. I was able to obtain sufficient advance information about the program.
%	39	30	15	9	6	
N	20	13	0	0	0	20. This information was obtained early enough to allow me to make travel plans.
%	61	39	0	0	0	
N	13	15	2	3	0	21. I was well satisfied with application and registration materials.
%	39	45	6	9	0	
N	8	15	5	4	1	22. The program "ran smoothly."
%	24	45	15	12	3	
N	23	10	0	0	0	23. The break and lunch periods were long enough and spaced properly.
%	70	30	0	0	0	
N	21	10	1	1	0	24. I had ample opportunity for informal conversations.
%	64	30	3	3	0	
N	15	2	10	3	3	25. A similar program should be offered again.
%	45	6	30	9	9	

1. Organization: Sixteen or nearly half of the respondents felt the program was well organized or excellently organized. Fourteen felt the organization was adequate and only three felt the organization was inadequate or unsystematic.

2. Program length: Twenty-two or two-thirds of the respondents were well satisfied with the length of the program. Seven felt the program was long, but acceptable, two felt the program short, but acceptable, and two each felt the program was much too short or much too long.

3. Outcomes and prior expectations: The congruence between program outcomes and prior expectations was the area which received the lowest ratings. While eighteen or 55 percent of the respondents felt the program was adequate or better in this respect, about a fourth of the people felt it barely adequate and one fifth felt it failed to meet their expectations.

4. Realism and attainability of objectives: Eighty-five percent or twenty-eight of the participants gave favorable responses in this category. Only five thought the objectives were lacking in realism and none felt that the objectives were completely unrealistic.

5. Applicability of content to needs: There were apparently some differing points of view in this area. Fourteen (42%) of those responding indicated the program was exceptionally or moderately well related to their needs. Six (18%) said it was slightly related. Six felt it was adequate and only one person indicated that the content was completely unrelated to his needs.

6. Level of content: Apparently, most of the participants were satisfied with the level of the content. Twenty-eight (85%) of the group felt the content was either just right or acceptable. Four felt the content far too high and one felt it entirely too low.

7. Opportunity for questions and discussion: The participants apparently felt there was sufficient opportunity for questions and discussion with 88 percent responding that they had ample opportunity and twelve percent moderate opportunity.

8. Printed instructional materials: A total of twenty-three (70%) of those responding rated the texts and other printed material as adequate, good or excellent. Thirty percent of the respondents expressed an inadequacy here with six stating the materials needed modification and four that the materials were inappropriate.

9. Contribution of program to job competencies: The responses in this category were quite positive. Eighteen (55%) of the participants felt the program would be helpful, four (12%) felt it would be of moderate value and three (9%) felt it would be of great value. Only six stated the program would be of little value and one that the program would be valueless.

10. Meeting rooms or accommodations: The respondents were very positive here. Two-thirds of the ratings were excellent and one-third were good.

Evaluation of instruction. A Likert type scale was used to evaluate the instruction in the program. Statements were phrased in such a way that "Strongly Agree" and "Agree" responses indicated a favorable or positive attitude toward the instruction and "Disagree" and "Strongly Disagree" would indicate a negative or unfavorable attitude.

In every one of the statements, the positive responses outnumbered the negative responses. The most positive responses were received on the instructors' knowledge of subject matter (Item 11 - 85%), the instructors' attitudes (Item 13 - 79%) and the assistance from the instructors (Item 18 - 90%). The two areas with the highest number of negative responses dealt with the instructors' organization of the presentations (Item 14 - 24%) and their receptivity to students' views (Item 17 - 21%).

Overall, the participants expressed very favorable attitudes toward the instruction. Over 70 percent of the responses were favorable, being about equally divided between "Strongly Agree" and "Agree." Only 13 percent of the responses were unfavorable and only four percent were in the "Strongly Disagree" category.

General organization of the conference. The participants were apparently pleased with the general organization of the program. Overall, 71 percent of the responses were favorable and only nine percent were unfavorable. Breaking this down further, almost one-half of the responses were in the "Strongly Agree" category (very favorable) and almost one-third were in the second most positive category. This contrasts with seven percent in the "Disagree" category and less than two percent in "Strongly Disagree."

There was a majority of favorable responses for every item and the largest percentage of unfavorable responses was 18 percent.

Overall Evaluation. An overall evaluation of the program indicates that the basic objective was accomplished; that is to

upgrade the competencies of vocational educators in utilizing manpower research in the planning of vocational education programs. A significant gain was shown on the post-test over the pre-test; the evaluation instrument reflected a favorable opinion of the program; and a majority of the respondents indicated that a similar program should be offered again.

(f) Conclusions, implications, and recommendations for the future.

This program, conducted as a pre-session to the American Vocational Association in New Orleans on December 4, 5 and 6, 1974, provided training in manpower research for thirty-six participants. The testing and evaluation indicated that the program was a success in meeting its basic objective and was favorably received by those attending. On the basis of the above conclusions, it is recommended that similar programs be continued in the future.

THE OHIO STATE UNIVERSITY

July 22, 1974

Mr. John Doe
4041 Mountview Road
Columbus, Ohio

Dear Mr. Doe:

The Ohio State University in cooperation with the AVA and the U. S. Office of Education will sponsor a special three-day research training program where the focus is on Manpower Information Systems for Vocational Education. This program will be held December 4, 5, and 6 at the Marriott Hotel in New Orleans as a pre-session to the 1974 AVA Convention.

The basic objective of this program is to upgrade the competencies of vocational educators in utilizing manpower information in the planning of vocational education programs.

Jack Kaufman and George Neumann, both of Pennsylvania State University, will be the instructors for this program. Dr. Neumann is an econometrician with expertise in manpower forecasting, research, statistics, and computer technology. Dr. Kaufman is a nationally known manpower economist with a broad background of experience in vocational education, manpower research, program planning, budgeting systems, and program evaluation.

The following topics will be covered:

- 1) The scope and function of research in the study of manpower needs.
- 2) Assessing manpower requirements by industry and occupation.
- 3) Utilizing existing labor market information in local program planning.
- 4) Collecting manpower data.
- 5) Translating manpower forecasts into program and curriculum requirements.

Appendix A

July 22, 1974

- 6) Cooperative approaches with government and community agencies for the planning, operation, and development of vocational education programs based upon accurate manpower data.
- 7) Development of a model for planning vocational/technical education programs based upon manpower research.

Enrollment is limited to 36 individuals who are directly involved in vocational/technical education in one or more of the following functions: program planning, administration, curriculum development, evaluation, and research. A \$10.00 enrollment fee will be charged to cover incidental expenses. Other instructional administrative costs will be covered through a grant from the U. S. Office of Education.

This announcement is being sent to you in the event that you may wish to nominate one or more persons from your state to attend this program. An application blank is enclosed for your convenience. If you know of someone who you feel would be interested in attending this program, would you please forward the application blank to him. Additional application blanks can be obtained by writing me. A similar letter is being sent to the person in your state who is listed as having the responsibility for program planning, research, and evaluation.

Applications will be accepted in the order received. However, preferences will be given to people who are directly involved in the activities covered by this program.

If there is any further information which you need, please let me know.

Sincerely yours,

Neal E. Vivian, Director
AVA Pre-Session
Manpower Information Systems
288 Arps Hall
1945 North High Street
Columbus, Ohio 43210

NEV/av
Encl. (1)

General Information

Mailing Address

Zip Code

Phone Number

(Area Code)

Baccalaureate

Major Area

School

Year

Masters

Major Area

School _____

Year

Doctorate

Major Area

School

Year

Present Title

Briefly describe your duties and responsibilities

(over)

Research and Vocational Education Positions Held (last 5 years)

I agree that if accepted to participate in this program I will be in attendance for the entire three-day period. Further, I understand that no reimbursement for travel, per diem or other expenses incurred as a result of my participation can be provided by this training project.

Signature

A block of rooms has been reserved at the Marriott Hotel for the participants in the Pre-session Training Program. A description of hotel accommodations and a reservation form is enclosed for your convenience. Participants will be expected to make their own reservations.

Please complete and return by October 15, 1974, together with the \$10.00 registration fee to:

Neal E. Vivian, Director
A.V.A. Pre-session Training Program
Manpower-Information Systems
288 Arms Hall
1945 North High Street
Columbus, Ohio 43210

Make checks or money order payable to: Neal E. Vivian.

PAGE 31, CONTAINING AN ANNOUNCEMENT OF
THE PRE-CONVENTION RESEARCH SESSION FROM THE
COPYRIGHTED AMERICAN VOCATIONAL JOURNAL, WAS REMOVED FROM
THIS DOCUMENT PRIOR TO ITS BEING SUBMITTED TO THE
ERIC DOCUMENT REPRODUCTION SERVICE.

THE OHIO STATE UNIVERSITY

August 20, 1974

Dr. Gertrude M. Enloe
LA Department of Education
P. O. Box 44064, Capitol Station
Baton Rouge, Louisiana

Dear Dr. Enloe:

You have been accepted to participate in the AVA Pre-Session Training Program - MANPOWER INFORMATION SYSTEMS. The program will be held on December 4, 5, and 6 in the Marriott Hotel in New Orleans. The receipt for your registration fee is enclosed. Additional and more detailed information will be sent to you in November.

A block of rooms has been reserved at the Marriott Hotel and rooms are available for those attending the Pre-Session for the nights of December 3, 4, and 5 only. If you have difficulty securing a room for the Pre-Session, please contact us. If, for any reason, you find you cannot attend, please let us know immediately so that someone on the waiting list may take your place. Registration fees will be returned only for cancellations received prior to November 15.

While the general topics and content of the program have been determined, there is a degree of flexibility in the program. In an attempt to meet the needs of the participants, we are soliciting from them any specific problem areas that they are faced with in their jobs. If there is a specific topic which you wish covered in this program or a special problem you might have, would you please let us know and, if possible, we will try to cover that topic in the workshop. Please let us know as early as possible on this.

Thank you for your interest and willingness to participate in this research training effort. We are looking forward to seeing you in New Orleans. Meanwhile, if you need any additional information, do not hesitate to call or write.

Very truly yours, 4

Neal E. Vivian, Director
A.V.A. Pre-Session Training Program
Manpower Information Systems

NEV/av
Encl.

Appendix D

THE OHIO STATE UNIVERSITY

September 25, 1974

Dear

Thank you so much for the application which you submitted to attend the AVA Pre-Session Training Program -- MANPOWER INFORMATION SYSTEMS.

At the present time the program is filled. Therefore, we are placing your name on the waiting list. Because of the nature of the program, enrollment was limited to 36 people. The applications exceeded this number. Selection of enrollees was made on two factors: the employment responsibilities of the applicant and the order in which the applications were received.

As I mentioned, your application is on our waiting list. In the event that we have cancellations, we shall accept those applications in the order that they appear on the waiting list. The check for your registration fee will not be cashed until you are accepted in the program. If you are not accepted, the check will be returned to you. If this arrangement is not satisfactory with you, please let me know.

Meanwhile, may I suggest that you consider enrolling in the Pre-Session Research Training Program conducted by the Center for Vocational and Technical Education. I am enclosing a copy of their program for your information.

You will be notified immediately if you are accepted in the program. Thank you for your interest in this program.

Sincerely yours,

Neal E. Vivian, Director
A.V.A. Pre-Session Training Program
Manpower Information Systems

NEV/av
Encl.

AVA PRE-SESSION
MANPOWER INFORMATION SYSTEMS
New Orleans, Louisiana
December 4-5-6, 1974

DIRECTOR: Neal E. Vivian
Vocational-Technical Education
The Ohio State University
1945 North High Street
Columbus, Ohio 43210

FACULTY: Jacob J. Kaufman
413 Kern Graduate Building
Pennsylvania State University
University Park, Pennsylvania 16802

George Neumann
506 Kern Graduate Building
Pennsylvania State University
University Park, Pennsylvania 16802

U.S.O.E.: Jack A. Wilson
Research Branch
Division of Research & Demonstration
Bureau of Occupational & Adult Education
U. S. Office of Education
Dept. of Health, Education & Welfare
Washington, D. C. 20201

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St. Paul, Minnesota 55101

George H. Copa
Minnesota Research Coordinating
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University of Minnesota
Minneapolis, Minnesota 55455

Appendix F

Participants - 2

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Maryland State Department
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6510 Elkridge Landing Road
Baltimore, Maryland 21240

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Tomorrow's Manpower Needs Studies
U. S. Department of Labor
Bureau of Labor Statistics
Washington, D. C. 20212

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Department of Education
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Tallahassee, Florida 32304

Gertrude M. Enloe
LA Dept. of Education
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Baton Rouge, Louisiana 70804

Donald Eshelby
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Albany, New York 12203

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Theresa M. Mack
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Bureau of Occupational
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N. Y. S. Education Department
Albany, New York 12224

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University of Nebraska
Lincoln, Nebraska 68508

James R. Michael
Division of Administration &
Business Research
P. O. Box 5796, Tech Station
Ruston, Louisiana 71270

Robert G. Millard
Wisconsin Vocational Educ. Board
4802 Sheboygan Avenue, Room 704
Madison, Wisconsin 53702

Michael M. Murphy
Building 6 - Unit B-230
State Capitol Complex
1900 Washington Street, East
Charleston, West Virginia 25305

Participants - 3

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Vocational Education Division
P. O. Box 771
Jackson, Mississippi 39205

Harvey T. Ollis
Michigan Department of Education
Vocational-Technical Education Service
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Lansing, Michigan 48904

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Santa Fe, New Mexico 87503

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Mississippi State, Mississippi 39762

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Hato Rey, Puerto Rico 00919

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94 Knollwood Road
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Fred M. Wrighton
P. O. Box 5796, Tech Station
c/o Division of Administration
& Business Research
Ruston, Louisiana 71270

INSTRUCTIONS: This questionnaire is designed to give us some background on the opinions of workshop participants. Please answer the multiple-choice questions by circling the letter in front of the response that you think is most correct.

1. Which of the following influences is most likely to affect the number of employment opportunities in the 1970s for carpenters?
 - a. growth of the population
 - b. urban renewal
 - c. increases in the GNP
 - d. attrition of the current labor force
 - e. technological innovation

2. Which of the following factors is most likely to introduce error into a projection of manpower needs?
 - a. changes in economic conditions
 - b. population changes
 - c. shifting employment patterns
 - d. technological innovation
 - e. substitution of labor skills

3. Which of the following factors is least likely to introduce error into a projection of manpower needs?
 - a. changes in economic conditions
 - b. population changes
 - c. shifting employment patterns
 - d. technological innovation
 - e. substitution of labor skills

4. Which of the following is probably least important in the development of a vocational education curriculum?

- a. familiarity with the subject to be taught
- b. an inventory of the resources available to the program
- c. knowledge of local labor market conditions
- d. a statement of goals and objectives
- e. an understanding of the characteristics of young people

5. Which of the following influences is most likely to affect the number of employment opportunities in the 1970s for computer programmers?

- a. growth of the population
- b. wider application computers
- c. increases in the GNP
- d. attrition of the current labor force
- e. technological innovation

6. Which of the following sources is least likely to provide projections of manpower data of the type useful to vocational educators?

- a. the U. S. Department of Labor
- b. the U. S. Bureau of the Census
- c. local office of the State Employment service
- d. special studies conducted by universities

7. Forecasting of manpower requirements is best achieved by:

- a. regression analysis
- b. input-output analysis
- c. trend extrapolation
- d. adoptive forecasting

8. The use of occupational data has been hindered primarily because

- a. data on occupations are never available
- b. data on occupations are always in error
- c. data on occupations are six years out of date when it becomes available
- d. data on occupations are too disaggregated

9. The essential feature of a forecasting model should be:

- a. the ability to predict surpluses or shortages
- b. the cost per forecast
- c. the effect the forecast has on planning
- d. no one feature should predominate

10. Multivariate regression analysis is a tool by which:

- a. the causal effects between two or more factors may be determined
- b. the relationship between two or more factors may be determined
- c. the significance of certain goals may be determined
- d. the importance of certain factors may be determined

AGENDA

AVA Pre-Session

MANPOWER INFORMATION SYSTEMS

Wednesday, December 4, 1975

8:30 a.m.

- Pre-Testing of Participants
- The Logic and Method of Manpower Planning

11:30 a.m. - 1:00 p.m.

- Lunch
- Elements of Manpower Planning Models
- Type of Models and Their Limitations

Thursday, December 5, 1974

8:30 a.m.

- Group Discussion:
 - Construction of Model
 - Data Limitations
 - Case Study: Coal Mining

11:30 a.m. - 1:00 p.m.

- Lunch
- Four Groups: Solve a Problem in Manpower Planning
- Post-Testing of Participants

Friday, December 6, 1974

8:30 a.m.

- Group Analysis of Four Approaches to Problem

11:30 a.m. - 1:00 p.m.

- Lunch
- Utilization of Computer in Manpower Planning
- Summary

AVA Pre-Session
MANPOWER INFORMATION SYSTEMS
New Orleans, Louisiana
December 4, 5, & 6, 1974

PARTICIPANTS' EVALUATION

Please complete this form and return it to the Program Director, Neal E. Vivian, at the end of the Seminar. Mark the space which most nearly describes your evaluation of the program.

1. ORGANIZATION OF THE PROGRAM

☒ Excellent organization in meaningful sequence

☐ Well organized

☐ Adequate, but could be better

☐ Inadequate organization

☐ Confused and unsystematic

Comments: _____

2. PROGRAM LENGTH

☐ Program length was just right

☐ Program was long, but acceptable

☐ Program was short, but acceptable

☐ Program was much too long

☐ Program was too short to cover the content

Comments: _____

3. DEGREE TO WHICH PROGRAM OUTCOMES MET MY PRIOR EXPECTATIONS

- ☐ Program exceeded my prior expectations
- ☐ My prior expectations were well met
- ☐ Program was adequate in terms of prior expectations but could have been better
- ☐ Program was barely adequate in this respect
- ☐ Program completely failed to meet my expectations

Comments: _____

4. HOW REALISTIC AND ATTAINABLE WERE THE OBJECTIVES AND OUTCOMES OF THE SEMINAR?

- ☒ Very realistic and easily attainable
- ☐ Capable of being accomplished by most participants
- ☐ Adequate, or average
- ☐ Lacking in realism considering time involved and type of participants
- ☐ Completely unrealistic

Comments: _____

5. APPLICABILITY OF CONTENT TO NEEDS

☐ Content was exceptionally well related to my needs

☐ Content was moderately well related to my needs

☐ Content was adequate -- could be better

☐ Content was only slightly related to my needs

☐ Content was completely unrelated to my needs

Comments: _____

6. LEVEL OF CONTENT

☐ Content level was just about right

☐ High, but acceptable

☐ Low, but acceptable

☐ Content was far above level needed for my work

☐ Level was entirely too low

Comments: _____

7. OPPORTUNITY FOR QUESTIONS AND DISCUSSION

☐ Ample opportunity

☐ Moderate opportunity

☐ Occasional opportunity

☐ Rare opportunity

☐ Never

Comments: _____

8. TEXTS OR OTHER PRINTED INSTRUCTIONAL MATERIALS

- ☐ Texts and materials excellent
☒ Good
☐ Adequate, but could be better
☐ Text and materials need modification
☐ Text and materials entirely inappropriate

Comments: _____

9. CONTRIBUTION OF PROGRAM TO INCREASED JOB COMPETENCIES

- ☐ Program will be of great value in increasing job competencies
☐ Program will be helpful
☐ Program will be of moderate value only
☐ Program will be of little value
☐ Program will be valueless

Comments: _____

10. MEETING ROOMS OR ACCOMMODATIONS

- ☐ Excellent
☐ Good
☐ Barely adequate
☐ Poor
☐ Completely inadequate

Comments: _____

On the following questions please check the appropriate space which best describes your reaction to each statement. SA = strongly agree, A = agree, N = neutral, D = disagree, SD = strongly disagree

SA A N D SD

11. The instructors possessed a thorough knowledge of the subject.
12. The instructors could communicate the subject matter to the students.
13. The instructors' attitudes were enthusiastic and stimulating.
14. The instructors' presentations were well organized.
15. The method of teaching was appropriate to the program.
16. My responsibilities were clearly defined.
17. The instructors were receptive to the expression of student views.
18. Assistance from the instructor was readily available.

GENERAL ORGANIZATION OF THE CONFERENCE

19. I was able to obtain sufficient advance information about the program.
20. This information was obtained early enough to allow me to make travel plans.
21. I was well satisfied with application and registration materials.
22. The program "ran smoothly."
23. The break and lunch periods were long enough and spaced properly.
24. I had ample opportunity for informal conversations.
25. A similar program should be offered again.

Please indicate in the space provided below two or three ways that you plan to apply the outcomes that you have obtained from attending this program.

Please indicate in the space provided below your suggestions for topics or problem areas for future training seminars. You may also indicate any other general suggestions for conducting future training programs.
